

FACTS

FOR ENVIRONMENTAL STUDIES
Investigating Your Environment



Ministry
of the
Environment

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Minister

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A LESSON PLAN FOR INVESTIGATING AN URBAN ENVIRONMENT

Set the stage for this investigation by reviewing quickly what will take place in the allotted time. For example: During this session we want to investigate an urban environment and collect information that will tell us about the livability, functions, needs, and problems of this community. In addition to finding out about this community, you will be developing procedures you can use with your students to investigate your own community.

I. IDENTIFYING COMPONENT PARTS OF AN URBAN ENVIRONMENT

1. Distribute a copy of a map of the urban area you want to investigate to each person. Have it large enough to make notes on when in the field.
2. Working in small groups, list as many things as you can think of that might affect the quality of the environment in this community.

Distribute Task A cards.

TASK A: (20 minutes) Work in groups of 5-6.

List some things that might affect the quality of the environment in this community. (Use map and past knowledge of area.) Group items by categories and label categories.



Questions and discussion:

1. What categories did you come up with? List on board just as groups report (e.g., human factors, land use, transportation, community facilities, etc.). If group listed individual items in the community, you may have to group and label into large categories (housing, commercial, utilities, transportation, land, etc.).
2. What criteria would you use in selecting an area of this community to study?
3. Have each group spend 10-15 minutes drawing boundary lines around an area they decide to investigate. Use map passed out at first.
4. What could you do in this community to collect first-hand information about each of the categories decided upon?

Note: Refer to page six for some instructions on how to conduct the investigations outlined in this packet.



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TASK B: (60 minutes)

Develop a plan of action to investigate the part of the community chosen. Consider such things as: how to divide responsibility for collecting information; what information to collect; will the group stay together or split up; most efficient ways to collect and record information; tools needed to record information.

Note: Information in TASK B should show relationships between items from the inventory, cause and effect relationships, conflicts and complements, information should show specifics or details which help explain or clarify a relationship. Methods may include: questioning, opinion polls from residents, user counts of facilities, traffic counts, maps in greater detail, etc.

Ask each group to report briefly on the procedures they have developed for the planned investigation of the _____ community.

III. COLLECTING, RECORDING, AND REPORTING SURVEY INFORMATION

Distribute Task C cards.

TASK C: (3-4 hours) Field investigation.

Each group spend 3-4 hours to do a visual survey and investigation of that portion of the community decided upon, using the methods of collecting, recording, and interpreting data each group developed.



Distribute Task D cards.

TASK D: (5 minutes, each group) After return from field investigation.

Plan a 5-minute report that describes the methods used and the information collected in TASK C. The report must use the following criteria:

- a. Use more than one person as spokesman.
- b. Use visual displays.
- c. Include a variety of information media and methods of getting it.
- d. 5-minute time limit.
- e. Consider—what you did, how you did it, what it meant.

Questions and discussion:

1. What are some component parts of the environment that you just investigated? (List on board)
e.g., roads, homes, business, river, recreation.
2. In what ways are the component parts interrelated? e.g., transportation to business, buildings to public utilities, transportation to land forms, strip city development to transportation, etc.
3. How does each part of the community investigated relate to the other areas? To the total community?
4. What would happen if one whole segment of the community were eliminated? One category?
5. What examples are there in your area that:
illustrate the past—
typify the present—
indicate the future—
6. What are your recommendations for meeting future needs in this area?
7. If you were the city planning commission, what guidelines would you develop for consideration of future developments in this area?
 - a.
 - b.
 - c.
8. Identify three factors that affect the quality of your area.

IV. IDENTIFYING AND CONSTRUCTING AN INVESTIGATION OF ONE ENVIRONMENTAL PROBLEM

Let's take an example of one interrelationship and investigate one segment of it.

Note: Pick one example such as transportation—traffic congestion and have group list items under the following three columns, one column at a time.

What we want to find out about
the interrelationship

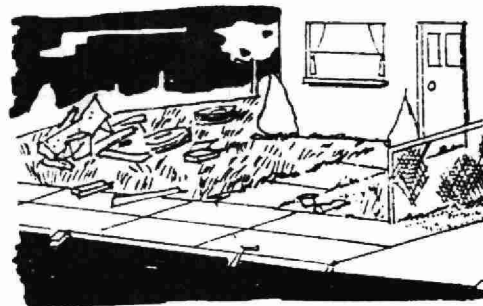
e.g.: How many cars
Where they go
Where come from

How to collect the information

survey-visual count,
questionnaire
questionnaire

How to record information

graph
description
map location



Distribute Task E cards.

TASK E: (30 minutes) Work in original small groups.

Select one interrelationship or problem that you identified and develop an in-depth investigation to find out more about it. Consider: What you need to find out about it, actual samples of how to collect and record information, cause-effect relationship, alternative solutions to the problem, where to collect additional data, what social and political decision-making processes are available.

Note: If this whole lesson is done over an extended period of time, each group should be allowed to carry out its investigation.

Questions and discussion:

1. Have each group make a report covering points in TASK E.
 2. Now that we know more about the _____ community, do TASK F. Distribute task cards.
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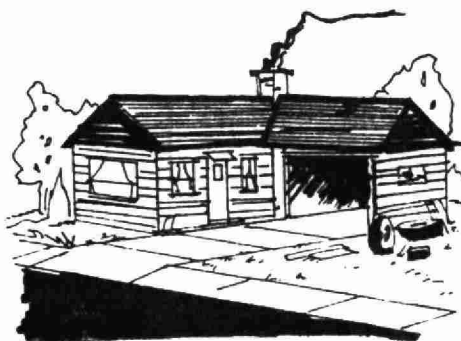
TASK F: (15 minutes) Small groups.

List what you can say about your study area in relation to its: (consider past, present, future)

Functions

Problems

Needs



Questions:

1. What are the basic functions of your study area? Whole community?
2. What are some of the most obvious problems?
3. What are some of the needs of the study area?
4. Identify three factors that affect the quality of the environment in the area studied.
5. What impact does this survey area have on the management of the community?
6. What additional information would you like to have had before making a decision?

V. COMMUNICATING FEELINGS, AWARENESS, AND VALUES

Distribute Task G cards.

TASK G:

Describe what you would do to solve or improve the problem you identified in TASK E:
as a member of a community action group
as a part of the political decision-making process in your community.

Questions and discussion:

1. Discuss individual comments.
2. What type of community action can we take to identify and motivate people to collect, interpret data, arrive at alternative solutions, and take intelligent action to decide on the best solution consistent with the needs of the environment and society.

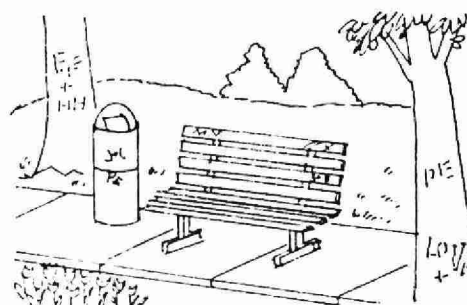
Summary questions:

1. What did we find out about the environment in our study?
2. How can we summarize our discussion and investigations?
3. What processes and methods did we use in our investigation today?

Distribute Task H cards.

TASK H:

Describe in writing how you feel about our session today.



CONDUCTING THE INVESTIGATIONS

The following guidelines may help in conducting the environmental investigations in this packet. They are not "sure fire," of course, and may require some adaptation in different situations. They take into consideration some of the stumbling blocks that can interfere with the student's fullest involvement in learning activities.

1. Minimize as fully as possible the amount of lecturing, showing, or telling.
2. Go over the objectives of the investigation, briefly, with the students so they will know what to expect.
3. Do a preview by yourself of the investigation in the place where it is to be conducted.
4. Plan and pace the session so that each task can be done thoroughly and well.
5. If there are time restrictions that prevent doing an entire investigation, decide in advance which tasks are to be omitted. Don't get trapped into rushing so much that you provide all the data verbally instead of allowing students to collect it.
6. Use the lesson plans as a guide, particularly for the questioning and discussion periods, but don't hesitate to revise as necessary once the plan has become familiar.
7. Start the summarization of the investigation at least a half hour before the time period ends. Since these summaries deal with the ways that what is learned in the investigations can be applied to land management and environmental problems, they are extremely important and should be given ample time.
8. Use the summarizations as evaluation tools. The discussion that concludes each session will reveal what concepts and understandings have been acquired by students and what additional information they may need.
9. Include a discussion of ways the investigation can be used in classrooms or on schoolgrounds, especially giving consideration to ways environmental studies can be integrated with other subject areas of the school curriculum.
10. Do a self-evaluation of the session while it is still fresh in mind so that improvements can be made for later sessions.

Moving people from place to place and having enough equipment may not be the most important things in an instructional activity; however, too little attention to these can detract from the success of the instruction, so consider the following:

1. Make sure that you have enough equipment and that it is in working order.
2. Plan for checking out and returning the equipment. It is usually best to assign a student to this job.
3. Discuss possible hazards, "rules of the road," and sanitary provisions with the students before leaving for the study area.

CONCLUSION

The ideas and activities in these teaching materials will not "come to life" until you have tried them, modified them, and improved them to fit your own needs and the location. Every teacher has a special style of his own, and he should use the lesson plans to fit that personal style.

This lesson plan was originally prepared by the U.S. Dept. of Agriculture, Forest Service, Environmental Education Branch, Washington, D.C. 20250, and appeared in the publication "Teaching Materials for Environmental Education".

The illustrations are taken from the series Environmental Learning Experiences with the permission of the Ohio Dept. of Education, Columbus, Ohio.

MICRO-URBAN INVESTIGATIONS (OPTIONAL)

In addition to major component parts or categories of an urban environment, there are many opportunities for small individual environmental investigations.

Investigations of this nature should be developed in writing along the same procedures as in TASK B, C, or E.

Distribute Task I cards.

TASK I:

Develop in writing an investigation about some part of the man-made environment.

- a. Describe procedures for conducting the investigation in action or process terms.
 - b. State objectives in behavioral outcomes that indicate some minimal expectations in acquiring new knowledge and skills.
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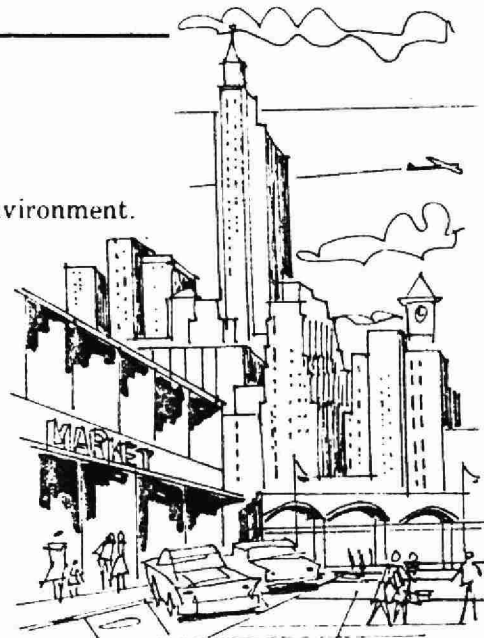
Here are some suggested micro-urban environmental investigations:

1. Correlation of observable weather conditions to air pollution index.
2. Correlation of man-made sounds to noise pollution.
3. Effect of signs and billboards on sight pollution.
4. Effect of architecture on aesthetics.
5. Impact of local shopping center on community.
6. Supermarket survey (packaging, buying habits).
7. Interpret the man-made landscape using architectural styles, etc.
8. Observe and record life in a park.
9. Man's effect on watersheds through paving.
10. Under what conditions plant life can live in a blacktop environment.
11. Compare a downtown city block to a residential block.
12. Determine the effect of different types of man-made surfaces on water holding capacity and runoff.
13. Environment of a city tree.
14. Determine what is in a city block.
15. Noise pollution. Determine where noises occur most frequently and which city noises could be reduced to minimize noise pollution.
16. An analysis of traffic past a given point.
17. Inventory and classify historic structures within the central business district of your hometown and determine necessities for their protection.
18. The effect of a four-day work week on the community environment.
19. Does storm runoff from city streets contribute to water pollution?
20. Identifying factors and developing tools to help in recording and interpreting air pollution indexes in the local community.

Behavioral Outcomes in Knowledge

As a result of these activities, you should be able to:

Identify at least three factors that affect the quality of the environment.



Describe a procedure to use in initiating an environmental investigation that can take place in any urban environment.

Identify at least three component parts of an urban environment.

Describe four interrelationships that exist between component parts of the environment.

Behavioral Outcomes in Feelings, Awareness, Values, and Action

As a result of these activities, you should be able to:

Describe what you can do to become involved in community action programs that identify and suggest solutions to local environmental problems.

Describe how you and other people in the community can become involved in affecting the local political decision-making process through environmental urban investigations.

Analyze the cause and effect relationships of factors affecting the quality of the environment. This is prerequisite to any positive change.

Identify forces and change agents that can be used for or against an improved livability of the area.

Equipment needed: enlarged maps of the urban area to be investigated, blackboard or newsprint easel, magic markers or chalk, paper and pencils.

Additional Information

The following work sheets could be used to provide additional information to people investigating an urban environment after they have completed TASKS A, B, and C. The group may identify different component parts of the environment than those listed here.

LAND USE SURVEY WORK SHEET

1. Inventory and plot on map

List the major uses of land in the area under study.

Group these uses into appropriate categories.

Label the categories.

Develop a legend for plotting this data on the map.

2. Additional Information

DEVISE YOUR OWN METHODS TO COLLECT AND RECORD DATA.

SUBMIT THE METHODS AND THE DATA, IN WRITING, TO YOUR GROUP LEADER
AT THE END OF THE SESSION.

How does each land use affect the other land uses of the area?

What problems exist because of certain land uses?

What land use problems in this area are related to regional
environmental problems?

What things are being done to the land that are compatible with:
the characteristics of the land?
the needs of the people?

Which land uses are changing?

What proposed projects could affect land use patterns in this area?

Note: The above questions are designed to help you look for significant relationships between things in the environment. Time may not allow you to investigate all of the suggestions. Therefore, you will have to decide which things are most significant in the time allowed. Feel free to add to the list or change it as needed.

Something to think about. For each of the land uses you investigate, ask yourself:

Is it in a good location to serve its purpose?

What does it do to the environment?

What kind of an environment does it have?

3. *Summary questions on land use survey*

See questions and discussions after TASK D.

TRAFFIC AND TRANSPORTATION SURVEY WORK SHEET

1. *Inventory and plot on map*

List the major traffic routes in the area.

Group these routes into appropriate categories.

Label the categories.

Develop a legend for plotting this data on the map.

2. *Additional information*

DEVISE YOUR OWN METHODS TO COLLECT AND RECORD DATA.

SUBMIT THE METHODS AND THE DATA, IN WRITING, TO YOUR GROUP LEADER
AT THE END OF THE SESSION.

List the major user groups of each category listed in #1 above.

Which are the most heavily traveled routes?

What problems are associated with traffic and transportation in the area?

What is the effect of these problems on the rest of the study area?

What traffic and transportation problems associated with this area are related to regional
environmental problems?

What proposed projects could affect traffic and transportation patterns in the area?

Note: The above questions are designed to help you look for significant relationships between things in the environment. Time may not allow you to investigate all of the suggestions. Therefore, you will have to decide which things are most significant in the time allowed. Please feel free to add to the list or change it as needed.

Something to think about. For each of the traffic and transportation routes you investigate, ask yourself:

Is it in a good location to serve its purpose?

What does it do to the environment?

What kind of an environment does it have?

3. *Summary questions on traffic and transportation survey*

See questions and discussions after TASK D.

COMMUNITY FACILITIES AND SERVICES SURVEY WORK SHEET

1. *Inventory and plot on map*

List the community facilities and services in this area.

Group these facilities and services into appropriate categories.

Label the categories.

Develop a legend for plotting this data on the map.

2. *Additional information*

DEVISE YOUR OWN METHODS TO COLLECT AND RECORD THIS DATA.

SUBMIT THE METHODS AND THE DATA, IN WRITING, TO YOUR GROUP LEADER AT THE END OF THE SESSION.

List the user groups for each category in #1 above.

What reasons can you give for the locations of each of the community facilities and services listed?

What needs of the people are being met by these facilities and services?

What needs are not being met by existing facilities and services?

What problems are associated with the quantity and quality of community facilities and services in this area?

Which of these problems are related to regional problems?

What proposed projects could affect the use and effectiveness of community facilities and services in this area?

Note: The above questions are designed to help you look for significant relationships between things in the environment. Time may not allow you to investigate all of the suggestions. Therefore, you will have to decide which things are most significant in the time allowed. Please feel free to add to the list or change as needed.

Something to think about. For each of the community facilities and services you investigate, ask yourself:

- Is it in a good location to serve its purpose?
- What does it do to the environment?
- What kind of an environment does it have?

3. *Summary questions on community facilities and services*

See questions and discussions after TASK D.

ENVIRONMENTAL ASSETS AND LIABILITIES SURVEY WORK SHEET

1. *Inventory and plot on map*

List the environmental assets of the area (physical and visual).

Examples:

historic landmarks, structures with visual impact, natural features, aesthetically pleasing entrances, etc.

List the environmental liabilities of the area (physical and visual).

Examples:

conflicting land uses, heavy traffic streets, residential overcrowding, poor paving, curbs, sidewalks, adverse natural features, sameness of environment, etc.

Group the environmental assets and liabilities into appropriate categories.

Label the categories.

Develop a legend for plotting this data on the map.

2. *Additional information*

DEVISE YOUR OWN METHODS TO COLLECT AND RECORD THIS DATA.
SUBMIT THE METHODS AND THE DATA, IN WRITING, TO YOUR GROUP LEADER
AT THE END OF THE SESSION.

How do the environmental assets affect the rest of the area? Be specific.

How do the environmental liabilities affect the rest of the area? Be specific.

Which environmental assets have potential for serving as building blocks to improve the livability of this area?

What problems exist because of adverse environmental factors in the area?

What environmental problems in this area are related to regional environmental problems?

What proposed projects could affect environmental assets and liabilities in this area?

Note: The above questions are designed to help you look for significant relationships between things in the environment. Time may not allow you to investigate all of the suggestions. Therefore, you will have to decide which things are most significant in the time allowed. Please feel free to add to the list, or change as needed.

Something to think about. For each of the environmental assets and liabilities you investigate, ask yourself:

- Is it in a good location to serve its purpose?
- What does it do to the environment?
- What kind of an environment does it have?

3. *Summary questions on environmental assets and liabilities*

See questions and discussions after TASK D.

SOCIAL SURVEY WORK SHEET

1. *Inventory and plot on map*

Collect information about the population characteristics of the area: e.g., age, income, education, size of families, renters-owners, length of residence, etc.
Develop a legend for plotting this data on the map.

2. *Additional information*

DEVISE YOUR OWN METHODS TO COLLECT AND RECORD THIS DATA.
SUBMIT THE METHODS AND THE DATA, IN WRITING, TO YOUR GROUP LEADER
AT THE END OF THE SESSION.

What needs of the residents are met by living in this area?
What social problems exist in the area?
Which problems associated with this area are related to regional environmental problems?
What changing conditions in the area are creating problems for its residents?
What proposed projects could:
 affect the life-style of people in this area?
 lead to a change in the population characteristics of this area?
What are the attitudes of the people in this area toward:
 governmental and private services
 citizen needs
 overall quality of life in the area? See attached opinion poll.

Note: The above questions are designed to help you look for significant relationships between things in the environment. Time may not allow you to investigate all of the suggestions. Therefore, you will have to decide which things are most significant in the time allowed. Please feel free to add to the list or change as needed.

3. *Summary questions on social survey*

See questions and discussions after TASK D.